

**Supplementary table S1: Pooled prevalence of specific bullying behaviours by level of training**

<b>Behaviour</b>	<b>No. of studies/ Total studies*</b>	<b>Medical Students No. of participants/ total participants (%) *</b>	<b>Residents and fellows No. of participants/ total participants (%)*</b>	<b>Consultants No. of participants/ total participants (%)*</b>
<b>Threats to professional status</b>				
Persistent unjustified criticism	10/24	200/301 (66.4)	3596/12708 (28.3)	600/2881 (20.8)
Excessive monitoring of work	4/24	Not reported	1020/2445 (41.7)	564/2824 (20.0)
Intimidatory use of discipline	14/24	641/13914 (4.6)	640/3594 (17.8)	38/1112 (3.4)
Spread of gossip/rumours	5/24	Not reported	2085/6366 (32.8)	755/2881 (26.2)
False allegations	4/24	Not reported	36/102 (35.3)	509/2881 (17.7)
Refusal of leave, training or promotion	8/24	74/551 (13.4)	379/3441 (11.0)	894/3403 (26.3)
<b>Isolation</b>				
Social/professional exclusion	16/24	418/1546 (27.0)	3687/12385 (29.8)	1272/4445 (28.6)
<b>Overwork</b>				
Undue pressure to produce work	7/24	Not reported	827/2928 (28.2)	1326/2824 (47.0)
Setting impossible deadlines	6/24	Not reported	351/2445 (14.4)	965/2824 (34.2)
<b>Destabilization</b>				
Shifting goalposts	1/24	Not reported	54/654 (8.3)	Not reported
Removal of areas of responsibility without consultation	6/24	11/56 (19.6)	267/2503 (10.7)	784/2824 (27.8)

Withholding information that affects performance	7/24	Not reported	2465/8869 (27.8)	1140/2824 (40.4)
Ordered to work below one's competence level	7/24	182/269 (67.7)	1276/3676 (34.7)	975/2881 (33.8)

---

\*Total number of studies that described types of bullying behaviours that separated data by level of training

**Supplementary table S2: The pooled impact of academic bullying by level of training**

<b>Effect of academic bullying</b>	<b>No. of studies/ Total studies*</b>	<b>Medical Students No. of participants/ total participants (%) *</b>	<b>Residents and fellows No. of participants/ total participants (%) *</b>	<b>Consultants No. of participants/ total participants (%) *</b>
<b>Psychiatric</b>				
Psychiatric distress including depressive/PTSD symptoms	12/28	422/579 (72.9)	2142/5256 (40.8)	178/996 (17.9)
Reduced confidence in clinical skill	4/28	119/262 (45.4)	Not reported	177/1259 (14.1)
<b>Career</b>				
Missed career opportunities	14/28	484/3020 (16.0)	149/426 (35.0)	1789/5854 (30.6)
Considered quitting	9/28	109/317 (34.4)	5/100 (5.0)	908/2375 (38.2)
Terminated employment	4/28	Not reported	135/3574 (3.8)	11/348 (3.2)
Leave of absence	2/28	Not reported	Not reported	50/748 (6.7)
Self-reported worsening of clinical performance	6/28	202/579 (34.9)	1168/3179 (36.7)	51/563 (9.1)

\*Total number of studies that described the impact of academic bullying and separated data by level of training

**Supplementary table S3. Suggested policies, interventions and reported outcomes**

<b>Intervention</b>	<b>Outcome</b>
<b>Zero-tolerance/Anti-bullying policy</b>	
(Cheema et al., 2005) *	Data not provided
(Wear et al., 2005) *	Data not provided
(Gadit et al., 2007) *	Data not provided
(Nagata-Kobayashi et al., 2009) *	Data not provided
(Imran et al., 2010) *	Data not provided
(Meloni and Austin, 2011)	Increased employee engagement and workplace satisfaction Increased trust among victims that reports would be appropriately managed (44% to 64%) Victims felt safer reporting incidents of bullying (67% to 84%) Improved awareness of where and whom to report to (67% to 84%)
(Fried et al., 2012)	Reduced power abuse (43% to 30%) but no change in overall mistreatment rates
(Askew et al., 2012) *	Data not provided
(Mavis et al., 2014) *	Data not provided
(Chadaga et al., 2016) *	Data not provided
(Kapoor et al., 2016) *	Data not provided
(Peres et al., 2016) *	Data not provided
(Wolfman et al., 2019) *	Data not provided
<b>Bullying workshops</b>	
(Oku et al., 2014) *	Data not provided
(Kulaylat et al., 2016) *	Data not provided

(Cresswell et al., 2016) *	Data not provided
(Benmore et al., 2018)	Increased willingness to try to repair the harm caused by bullying and became more conscious of giving feedback
(Castillo-Angeles et al., 2019)	Bullying behaviour persisted
(Colenbrander et al., 2020) *	Data not provided
(Stasenko et al., 2020) *	Data not provided

#### **Tracking and reporting mistreatment data**

(Gan and Snell, 2014)	No difference in mistreatment
(Mavis et al., 2014) *	Data not provided
(House et al., 2018)	Decreased unprofessional or disrespectful behaviour by faculty as reported by students [4.8% (2015-16) to 1.7% (2016-17)]
(Elghazally et al., 2020) *	Data not provided
(Hammoud et al., 2020) *	Data not provided

#### **Staff education on bullying and the reporting process**

(Cheema et al., 2005) *	Data not provided
(Wear et al., 2005) *	Data not provided
(Gadit et al., 2007) *	Data not provided
(Scott et al., 2008) *	Data not provided
(Imran et al., 2010) *	Data not provided
(Fried et al., 2012)	No change in reporting rate
(Al-Shafae, 2013) *	Data not provided
(Mavis et al., 2014) *	Data not provided
(Oku et al., 2014) *	Data not provided

(Crebbin et al., 2015) *	Data not provided
(Chadaga et al., 2016) *	Data not provided
(Peres et al., 2016) *	Data not provided
(Chung et al., 2018) *	Data not provided
(D'Agostino et al., 2019) *	Data not provided
(Chowdhury et al., 2019) *	Data not provided
(Zurayk et al. 2019) *	Data not provided
(Colenbrander et al., 2020) *	Data not provided
(Elghazally et al., 2020) *	Data not provided
(Lind et al. 2020)	Multiple effect**
(Brown et al., 2020) *	Data not provided
<b>Develop a committee to handle and support reporting</b>	
(Gadit et al., 2007) *	Data not provided
(Best et al., 2010)	Resolutions reached 96% of formal reports
(Kapoor et al., 2016) *	Data not provided
(Kemp et al., 2018) *	Data not provided
(Kappy et al., 2019)	Fewer comments on mistreatment
(Ayyala et al., 2019) *	Data not provided
(Brown et al., 2019) *	Data not provided
(Lind et al. 2020)	Multiple effects**
(Samora et al., 2020) *	Data not provided
(Hammoud et al., 2020) *	Data not provided

### **Accessible and confidential reporting**

(Imran et al., 2010) *	Data not provided
(Fried et al., 2012)	Reduced power abuse (43% to 30%) but no change in overall mistreatment rates
(Askew et al., 2012) *	Data not provided
(Al-Shafae, 2013) *	Data not provided
(Crebbin et al., 2015) *	Data not provided
(Mavis et al., 2014) *	Data not provided
(Colenbrander et al., 2020) *	Data not provided
(Brown et al. 2019) *	Data not provided
(Samora et al., 2020) *	Data not provided

---

\*Suggested approach that had not been implemented

\*\* In this study, a substantial decrease in mistreatment (from 62.9% to 40.3%), fear of reporting (from 42.2% to 37.1%), fear of reprisal (from 28.9% to 22.6%), and an increase in knowledge of reporting increased (from 88.8% to 94.2%) was observed.